



June 30, 2009

Leah Evison, Ph.D.
U.S. EPA Region 5
77 W. Jackson Blvd.
Chicago, IL 60604-3507

**Subject: Comments on URS Western Area Subsurface Investigation Report
Fields Brook Superfund Site, Ashtabula, Ohio**

Dear Ms. Evison:

Gradient has reviewed the Detrex Western Area Subsurface Investigation Report (URS, 2009)¹. We believe that the URS study provides data that continues to reinforce and refine the Conceptual Site Model (CSM) for the Site. This is despite significant limitations in the study's design. Findings from this study (*i.e.*, presence of Detrex signature compounds at elevated concentrations over a large area), and recent observations during the State Street Bridge project, provide additional and supporting lines of evidence of ongoing subsurface DNAPL migration towards Fields Brook. We do not agree with the conclusions reached by URS and believe they are not credible and or supported by the data.

The CSM for the Site is based on a large series of observations and studies performed at the Site since the original remedy was implemented in 2001. What we know is that DNAPL migrates along subsurface preferential pathways, most importantly the surface of the lacustrine clay and through fractures and sand seams within the clay. During the recent construction activities associated with the State Road bridge replacement work, DNAPL seeps were repeatedly found in multiple underground utilities and their surrounding bedding material. USEPA is aware of these findings. These findings reaffirm the CSM and demonstrate that DNAPL migration from the Detrex property to Fields Brook is ongoing. In addition, these findings also indicate that subsurface utilities are an important DNAPL preferential migration pathway at the Site.

It is widely acknowledged that DNAPL migration pathways are tortuous, sparsely distributed and extremely difficult to pinpoint. Therefore, DNAPL investigations must take these factors into consideration when determining how to sample the subsurface and how many samples to collect – factors which were not appropriately considered in the URS study design:

- URS advanced only 9 soil borings and collected only 4 groundwater samples to characterize a property boundary approximately 1000 ft long. So few samples are not capable of meaningfully characterizing sparsely distributed DNAPL migration pathways.
- No work was done to evaluate the mechanism by which DNAPL is entering the numerous current and former utilities that are located in the western portion of the Detrex property boundary, including some that go through the slurry wall.
- Test trenches, which were proposed along the western property boundary, and are a much better investigation tool than Geoprobos, were not installed.

¹ URS Corporation. 2009. Western Area Subsurface Investigation, Detrex Facility, Detrex Source Control Area - Fields Brook Superfund Site, Ashtabula, Ohio. March 2009.

Despite the deficiencies in the study design, the following findings of the study are significant:

- High PID readings indicative of the presence of DNAPL nearby were found throughout the soil column at MW-4, SB-2, and SB-5, to more than 30 feet below ground surface;
- Detrex DNAPL marker compounds were detected in soils at MW-3, MW-4, SB-3, SB-4, and SB-5, as much as 44 feet below ground surface; and
- PCE concentrations at boring SB-5 exceeded the soil saturation level², a widely accepted indicator of DNAPL presence.

Thus, 6 of the 9 soil borings showed Detrex DNAPL impacts, with these locations spanning the entire western Detrex property boundary, approximately 1000 feet in length, and at a distance of over 1200 feet from the original source area at the former Detrex lagoons. DNAPL is not migrating to these locations *via* dissolved phase transport. Rather, the presence of any concentrations of DNAPL constituents at these distances and depths is indicative of DNAPL presence at these locations or in close proximity. The fact that discrete and hard to locate DNAPL migration pathways were encountered by such a sparse sampling design is truly remarkable and puts the enormity of the Detrex DNAPL migration in proper perspective.

Also, we noted that standard soil sampling and handling procedures were not followed during the study – issues that undermine the quality of the study and the reported data:

- Soil samples were not methanol preserved, collected in Ziploc bags, and some samples were shipped in glass containers (not even VOA vials). Thus, VOCs were likely lost due to poor sample collection and handling.
- Soil samples were stored at elevated temperatures, *e.g.*, on January 30, 2009 samples reached the laboratory at a temperature of 8°C. The elevated temperature accelerates VOC losses during sample shipment.

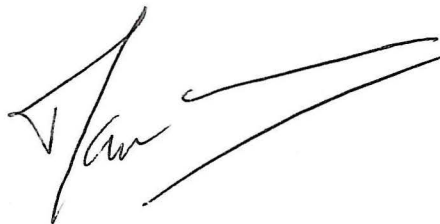
We would be happy to discuss this with you further at your convenience.

Sincerely,

GRADIENT CORPORATION



Samuel A. Flewellling, Ph.D.
Hydrologist



Manu Sharma, M.S., P.E.
Principal

² Gradient calculated the soil saturation level of 5.14 mg/kg for PCE in a previous memorandum. The PCE concentration at SB-5 (10-12 foot depth) was 10.8 mg/kg, indicating that DNAPL was present at this location.